

REMARKS

In the Final Office Action, the Examiner rejected claims 1-32. Claims 1-32 remain pending. Reconsideration and allowance of all pending claims are requested.

Double-Patenting

In the Final Office Action, the Examiner provisionally rejected claims 1-16 on the ground of non-statutory obviousness-type double patenting as being unpatentable over claims 1-8 and 17-24 of copending Application No. 10/723,857. The Examiner also provisionally rejected claims 17-32 on the ground of non-statutory obviousness-type double patenting as being unpatentable over claims 17-32 of copending Application No. 10/723,857, in view of Rogers (US Patent No. 5,477,144). In view of the provisional nature of this rejection, no response is believed necessary at this time.

Claim Rejections Under 35 U.S.C. §102

In the Final Office Action, the Examiner rejected claims 1-8 and 25-32 under 35 U.S.C. § 102(e) as being anticipated by Larson (US PG Pubs. No. 2004/0155653) (hereafter referred to as “the Larson reference”). Applicants respectfully traverse these rejections.

Legal Precedent

Anticipation under Section 102 can be found only if a single reference shows exactly what is claimed. *See Titanium Metals Corp. v. Banner*, 227 U.S.P.Q. 773 (Fed. Cir.1985). For a prior art reference to anticipate under Section 102, every element of the claimed invention must be identically shown in a single reference. *See In re Bond*, 15 U.S.P.Q.2d 1566 (Fed. Cir.1990). That is, the prior art reference must show the *identical invention* “in as complete detail as contained in the ... claim” to support a *prima facie* case of anticipation. *Richardson v. Suzuki Motor Co.*, 9 U.S.P.Q. 2d 1913, 1920 (Fed. Cir. 1989) (emphasis added). Thus, for anticipation, the cited reference must not only disclose all of the recited features but must also disclose the *part-to-part relationships* between these features. *See Lindermann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 U.S.P.Q. 481, 486 (Fed. Cir.1984). Accordingly, the Applicants need only point to a single element or claimed

relationship not found in the cited reference to demonstrate that the cited reference fails to anticipate the claimed subject matter. A *strict correspondence* between the claimed language and the cited reference must be established for a valid anticipation rejection.

Moreover, the Applicants submit that, during patent examination, the pending claims must be given an interpretation that is *reasonable* and *consistent* with the specification. See *In re Prater*, 162 U.S.P.Q. 541, 550-51 (C.C.P.A. 1969); *In re Morris*, 44 U.S.P.Q.2d 1023, 1027-28 (Fed. Cir. 1997); see also M.P.E.P. §2111 (describing the standards for claim interpretation during prosecution). Indeed, the *specification* is “the primary basis for construing the claims.” See *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005). It is usually dispositive. See *id.* Interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach. See *In re Cortright*, 49 U.S.P.Q.2d 1464, 1468 (Fed. Cir. 1999); see also M.P.E.P. §2111. That is, recitations of a claim must be read as they would be interpreted by those of ordinary skill in the art. See *Rexnord Corp. v. Laliram Corp.*, 60 U.S.P.Q.2d 1851, 1854 (Fed. Cir. 2001); see also M.P.E.P. § 2111.01. In summary, an Examiner, during prosecution, must interpret a claim recitation as one of ordinary skill in the art would reasonably interpret the claim in view of the specification. See *In re American Academy of Science Tech Center*, 70 U.S.P.Q.2d 1827 (Fed. Cir. 2004).

Independent Claims 1-8

Independent claims 1-8, generally recite the acquisition of motion data for two or more organs using sensor-based measurement systems (the recited electrical or non-electrical sensors). The Larson reference, to the contrary, generally describes the use of image-based techniques to derive motion data. Larson, Abstract, paragraphs 10, 14, 25, and 35. As pointed out previously by the Applicants, one of ordinary skill in the art interpreting the claims in view of the present specification would not interpret a sensor-based measurement system to be an imaging system.

In responding to these points, the Examiner erroneously suggests that reference to the specification in interpreting claim language constitutes improperly importing limitations from the specification into the claims. Final Office Action, p. 2, section 5. Applicants certainly

appreciate the difficulty faced by the Examiner in interpreting the claims in view of the specification without improperly importing limitations from the specification into the claims. However, Appellants respectfully note that the Federal Circuit, sitting *en banc*, recently provided a summary and additional guidance regarding the proper interpretation of claims in view of the specification. *See Phillips v. AWH Corp.*, 75 U.S.P.Q.2d 1321 (Fed. Cir. 2005) (*en banc*). In *Phillips*, the Federal Circuit again emphasized the primacy of the specification in claim interpretation. Particularly, the *Phillips* court noted that the specification “is always highly relevant to the claim construction analysis. Usually, it is dispositive; *it is the single best guide to the meaning of a disputed term.*” *Phillips*, 75 U.S.P.Q.2d at 1327 (quoting *Vitronics Corp. v. Conceptor, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)) (emphasis added). Moreover, the court also noted that:

Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim language *and most naturally aligns with the patent's description of the invention* will be, in the end, the correct construction.

Phillips, 75 U.S.P.Q.2d at 1328-29 (quoting *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998)) (emphasis added).

With the foregoing and controlling caselaw in mind, the Applicants remind the Examiner that, as clearly set forth in the present application, the acquisition of motion data using sensor-based techniques is distinct from those techniques that utilize the image data itself. Application, Figs. 1 and 2, p. 10, line 21 to p. 11, line 12; *see also* p. 11, line 14 to p. 15, line 9. In view of the clear distinction drawn between image-based and sensor-based techniques for measuring motion as set forth in the specification, no reasonable construction of claims 1-8 based on the specification could interpret the recited sensor-based approaches to encompass techniques where motion data is acquired from the image data, as generally disclosed in the Larson reference. Certainly, the mere fact that an MR imaging system runs on electricity does not make the MRI system an electrical sensor, as described in the cited passages of the application. Hence, no reasonable construction of the claim 1-8 could reasonably equate an MR imaging system, as disclosed in the Larson reference, with an

electrical sensor as described in the present application. Indeed, the Examiner's assertion of such equivalence, in clear contrast to the plain teachings of the specification of the present application noted above, appears disingenuous.

This point is further evidenced by the plain language of the claims in question. For example, independent claims 1-8 each recite the acquisition of image data (or the means for acquiring such image data) as separate from the acquisition of motion data by electrical or non-electrical sensors. Claims 5 and 6 recite means for acquiring image data that are separate and distinct from the means for acquiring motion data. Indeed, claims 7 and 8 recite an imager separately from the recited sensor-based motion measurement system. Thus the plain language of the claims, and the separate recitations of motion and image data (or, correspondingly, of sensor-based motion measurement systems and imagers) would appear to preclude interpreting an MR imaging system, as recited in the Larson reference, as acquiring motion data or of being a sensor-based motion measurement system.

In view of these deficiencies, no *prima facie* case of anticipation is believed to exist for independent claims 1-8.

Independent Claims 25-32

With regard to independent claims 25-32, the claims generally recite the acquisition of motion data for a heart using sensor-based measurement systems including both electrical and non-electrical sensors. As noted above, this is distinct from the Larson reference which generally recites the use of image-based techniques to derive motion data. Larson, Abstract, paragraphs 10, 14, 25, and 35. As discussed above with regard to claims 1-8, the acquisition of motion data using sensor-based techniques is distinct from those techniques that utilize the image data itself. Application, Figs 1 and 2, p. 10, line 21 to p. 11, line 12; *see also* p. 11, line 14 to p. 15, line 9. In view of the clear distinction drawn between image-based and sensor-based techniques for measuring motion as set forth in the specification, no reasonable construction of claims 25-32 based on the specification could interpret the recited sensor-based approaches to encompass techniques where motion data is acquired from the image data, as generally disclosed in the Larson reference.

Further, the plain language of claims 25-32 appear to preclude interpretation of an MR imaging system, as taught in the Larson reference, as being either an electrical or non-electrical sensor or sensor-based measurement system. For example, claims 25-28 separately recite the acquisition of image data using an imager of a MRI system (or PET system, X-ray system, and so forth) from the acquisition of motion data using electrical sensors and non-electrical sensors. Likewise, claims 29-30 recite corresponding means for acquiring image data, such as with an MRI system imager, and means for acquiring motion data using electrical sensors and non-electrical sensors. Indeed, claims 31 and 32 separately recite an imager of a MRI system (or of a PET, X-ray, PET-CT, or other modality), a sensor-based motion measurement system configured to measure non-electrical activity, and a sensor-based motion measurement system configured to measure electrical activity. Thus the plain language of the claims would appear to preclude interpreting an MR imaging system, as recited in the Larson reference, as acquiring motion data or of being a sensor-based motion measurement system.

Further, as noted in previous communications, the Larson reference appears to be devoid of the use of non-electrical sensors, as set forth in the present application and as recited in claims 25-32. Further, the Applicants note that, with regard to claims 25-32, the recited non-electrical sensors are not recited as being alternative to electrical sensors, but are instead in addition to the electrical sensors. *See* Application, claims 25-32. Further, the Examiner has failed in this and the preceding office actions to indicate where in the Larson reference such non-electrical sensors are described. The Applicants have so far been unable to identify the use of non-electrical sensors in the Larson reference and respectfully await some indication from the Examiner where this recited feature may be found in the Larson reference. In view of Applicants' review, the Larson reference appears to be devoid of any teaching of non-electrical motion measurement sensors.

In view of these deficiencies, no *prima facie* case of anticipation is believed to exist for independent claims 25-32.

Claim Rejections Under 35 U.S.C. §103(a)

In the Final Office Action, the Examiner rejected claims 9-24 under 35 U.S.C. § 103(a) as being unpatentable over Larson (US PG Pubs. No. 2004/0155653) (hereafter referred to as “the Larson reference”) in view of Rogers (US Patent No. 5,477,144) (hereafter referred to as “the Rogers reference”). Applicants respectfully traverse this rejection.

Legal Precedent

The burden of establishing a *prima facie* case of obviousness falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (PTO Bd. App. 1979). In addressing obviousness determinations under 35 U.S.C. § 103, the Supreme Court in *KSR International Co. v. Teleflex Inc.*, No. 04-1350 (April 30, 2007), reaffirmed many of its precedents relating to obviousness including its holding in *Graham v. John Deere Co.*, 383 U.S. 1 (1966). In *KSR*, the Court also reaffirmed that “a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *Id.* at 14. In this regard, the *KSR* court stated that “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does ... because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.” *Id.* at 14-15. In *KSR*, the court noted that the demonstration of a teaching, suggestion, or motivation to combine provides a “helpful insight” in determining whether claimed subject matter is obvious. *KSR, slip op.* at 14.

Furthermore, the *KSR* court did not diminish the requirement for objective evidence of obviousness. *Id.* at 14 (“To facilitate review, this analysis should be made explicit. See *In re Kahn*, 441 F.3d 977, 988 (CA Fed. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”). As our precedents make clear, however, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the

inferences and creative steps that a person of ordinary skill in the art would employ.”); *see also, In re Lee*, 61 U.S.P.Q.2d 1430, 1436 (Fed. Cir. 2002) (holding that the factual inquiry whether to combine references must be thorough and searching, and that it must be based on *objective evidence of record*).

Independent claims 9-16

With regard to claims 9-16, the Applicants note that claims 9-12 generally recite the acquisition of a set of image data and a set of motion data from both electrical sensors and non-electrical sensors. Likewise, claims 13-14 recite corresponding means for acquiring image data and means for acquiring motion data using electrical sensors and non-electrical sensors. Indeed, claims 15 and 16 separately recite an imager, a sensor-based motion measurement system configured to measure non-electrical activity, and a sensor-based motion measurement system configured to measure electrical activity.

The Applicants respectfully note that neither the Larson reference nor the Rogers reference, alone or in combination, disclose the acquisition of image data, non-electrical motion data, and electrical motion data. At best, the Larson and Rogers references, alone or in combination, teach that image data may be acquired with one other physiological signal, which the Examiner has chosen to equate to the recited motion data. *See, for example*, Rogers, Fig. 4. However, even if, for the sake of argument, this was correct, neither reference alone or in combination discloses the acquisition image data and both electrical and non-electrical motion data, or separate systems to acquire such electrical and non-electrical motion data.

In view of this deficiency, no *prima facie* case of obviousness is believed to exist for independent claims 9-16.

Independent claims 17-24

With regard to claims 17-24, the Applicants note that claims 17-20 generally recite the acquisition of a set of image data, cardiac motion data acquired by non-electrical sensors, and respiratory motion data acquired by electrical sensors or non-electrical sensors. Likewise,

claims 21-22 recite corresponding means for acquiring image data and means for acquiring cardiac motion data using non-electrical sensors and respiratory motion data using electrical or non-electrical sensors. Indeed, claims 23 and 24 separately recite an imager, a sensor-based motion measurement system configured to measure non-electrical activity indicative of cardiac motion, and a sensor-based motion measurement system configured to measure electrical or non-electrical activity indicative of respiratory motion.

The Applicants respectfully note that neither the Larson reference nor the Rogers reference, alone or in combination, disclose the acquisition of image data, non-electrical heart motion data, and electrical or non-electrical respiratory motion data. At best, the Larson and Rogers references, alone or in combination, teach that image data may be acquired with one other physiological signal, which the Examiner has chosen to equate to the recited motion data. *See, for example*, Rogers, Fig. 4. However, even if, for the sake of argument, this was correct, neither reference alone or in combination discloses the acquisition image data and both non-electrical cardiac motion data and electrical or non-electrical respiratory motion data, or separate systems to acquire such non-electrical cardiac motion data and electrical or non-electrical respiratory motion data.

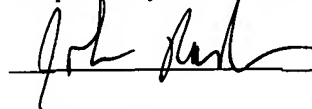
In view of this deficiency, no *prima facie* case of obviousness is believed to exist for independent claims 17-24.

Conclusion

In view of the remarks set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Date: August 20, 2007

Respectfully submitted,

A handwritten signature in black ink, appearing to read "John M. Rariden", is written over a horizontal line.

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